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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,648	09/04/2003	Akio Okamiya	P/4169-7	8323

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EXAMINER

ZACHARIA, RAMSEY E

ART UNIT	PAPER NUMBER
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1773

DATE MAILED: 12/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/656,648

Applicant(s)

OKAMIYA ET AL.

Examiner

Ramsey Zacharia

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) 8-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 21-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6/27/2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Election/Restrictions

2. Claims 8-20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 11 April 2005.

Claim Rejections - 35 USC § 112

3. Claims 1, 2, 5-7, 23, 25-30, and 32-38 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for an oil repelling agent comprising about 0.1 to about 0.6 wt% fluorine-based polymer, does not reasonably provide enablement for an oil repelling agent having a concentration of fluorine-based polymer outside this range. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims. Paragraph 0044 on page 10 of the instant specification states that if the fluorine-based polymer concentration is higher than about 0.6 wt%, the quantity of generated outgas is the same as that of a conventional oil repelling agent. Paragraph 0045 bridging pages 10 and 11 states that if the concentration of fluorine-based polymer is less than about 0.1 wt%, the agent cannot form an oil repelling film capable of sufficiently preventing wet diffusion.

Claim Rejections - 35 USC § 102 / 103

4. Claims 23-36 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Miura et al. (JP 2001-27242).

Miura et al. teach a dynamic pressure bearing device that may be used in a hard disc drive (paragraph 0003). An oil-repellent agent is applied to parts of the bearing device such as shafts and sleeves (paragraph 0004). The oil-repellent agent comprises a fluorinated resin (corresponding to the instant fluorine-based polymer) in a solvent (paragraph 0026). A fluorescent agent (corresponding to the instant UV coloring agent), such as a member of the coumarin system, is added to the oil-repellent composition, thereby making it possible for the parts coated with the oil-repellent agent to be visually recognized immediately.

Miura et al. do not teach the concentration of the fluorescent agent or fluorinated resin in the oil-repellent agent composition. However, these concentrations are drawn to the oil repelling agent while the claims are directed to bearing components. The oil repelling agent is not present in the articles of claims 23-36 because the oil repelling agent comprises a solvent and the solvent is removed to form the oil repelling film (see for example page 8, paragraph 35 and page 9 paragraph 37). The limitation that the oil repelling film is formed from the recited oil repelling agent is a product-by-process type of limitation (in that it specifies the material used in the process by which the oil repelling film is formed) and as such a rejection under 35 U.S.C. 102/103 is appropriate (see MPEP 2113). However, the concentration of UV agent and fluorine-based polymer in the resulting bearing device cannot be determined simply from the concentrations in the coating composition since the claims do not specify an amount of coating

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applied or other possible constituents in the coating composition. Moreover, the concentration of a component in a solution is unrelated to the concentration of the component in a coating formed from the solution. For example, consider three coatings:

coating composition A having 0.5% colorant, 4.5% binder, and 95% solvent,

coating composition B having 1% colorant, 9% binder, and 90% solvent, and

coating composition C having 5% colorant, 45% binder, and 50% solvent.

In each case, the resulting coating will be 10% colorant and 90% binder because the solvent is removed to form the coating. That is, the same coating may be derived from compositions having very different concentrations of colorant and binder. Alternatively, consider three coatings:

coating composition D having 1% colorant, 4% binder, and 95% solvent,

coating composition E having 1% colorant, 9% binder, and 90% solvent, and

coating composition F having 1% colorant, 19% binder, and 80% solvent.

The coatings resulting from compositions D, E, and F would have colorant concentrations of 25%, 10%, and 5%, respectively, demonstrating that coatings having different concentrations of colorant may be derived from compositions containing the same concentration of colorant.

Therefore, the limitation in claims 23 and 30 specifying the concentration of UV coloring agent in the solvent containing oil repelling agent does not limit the concentration of UV coloring agent in the coating. As such the bearing of Miura et al. reads on the invention of instant claims 23-36 since it appears to be the same as the instant bearing; the coating of Miura et al. comprises sufficient fluorinated polymer to repel oil and sufficient coumarin coloring agent to allow visual identification of the coating.

Claim Rejections - 35 USC § 103

5. Claims 1, 2, 5-7, 37, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miura et al. (JP 2001-27242).

Miura et al. teach a dynamic pressure bearing device that may be used in a hard disc drive (paragraph 0003). An oil-repellent agent is applied to parts of the bearing device such as shafts and sleeves (paragraph 0004). The oil-repellent agent comprises a fluorinated resin (corresponding to the instant fluorine-based polymer) in a solvent (paragraph 0026). A fluorescent agent (corresponding to the instant UV coloring agent), such as a member of the coumarin system, is added to the oil-repellent composition, thereby making it possible for the parts coated with the oil-repellent agent to be visually recognized immediately. Miura et al. also teach that an organic pigment, such as an anthraquinone dye, may be added to the oil-repellent composition (paragraph 0027).

Miura et al. do not teach the concentration of the fluorescent agent in the oil-repellent agent composition. However, Miura et al. do teach that the coloring agent is added to allow for visual recognition of the coating. The amount of coloring agent directly affects the degree of coloration of the product to be colored. That is, the amount of coloring agent is a results effective variable. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to optimize the amount of fluorescent agent in the coating composition of Miura et al., since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

6. Claims 1-7, 21-24, 27, 28, 30, 31, 34, 35, and 37-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yokouchi et al. (U.S. Patent 6,582,130) in view of Miura et al. (JP 2001-27242).

Yokouchi et al. is directed to a bearing device (column 1, lines 6-10). The device comprises a rust preventive film made of an oil-repellent material (column 5, lines 23-26). The rust preventive layer is formed by applying a rust preventive solution comprising as little as 0.5 wt% of a fluorine-based rust preventive dissolved in a diluent (column 5, lines 38-42). The fluorine-based rust preventive material is a fluorine substituted polymer (column 7, lines 8-25).

Yokouchi et al. do not teach the addition of a UV coloring agent or organic pigment to the rust preventive film.

Miura et al. is directed to fluorinated coatings applied to bearing devices. Miura et al. teach the incorporation of an organic dye or fluorescent agent, such as a compound of the coumarin system, into the coating to allow for immediate visual recognition of coated parts (paragraph 0027).

One skilled in the art would be motivated to add such a fluorescent agent to the rust preventive coating of Yokouchi et al. to provide a means for determining if a part has been coated. Moreover, since the amount of coloring agent directly affects the degree of coloration of the product to be colored, the amount of coloring agent is a results effective variable. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to optimize the amount of fluorescent agent in the coating composition of Miura et al.,

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since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claims 6 and 7, Miura et al. disclose the use of an organic coloring agent or a fluorescent agent with their coating for the same purpose, allowing for visual identification of the coating. It would be within the ability of one skilled in the art to use both a coloring agent and a fluorescent agent for applications in which multiple identifying means are desired.

Response to Arguments

7. Applicant's arguments filed 11 April 2005 have been fully considered but they are not persuasive.

Regarding the claims directed to bearing components, the applicants argue that the examiner's position is incorrect because it is irrelevant that solvent is removed from the oil repelling agent to form the film upon the bearing component. According to the applicants, what is relevant is what is actually recited in the claims, a film formed from an agent wherein the agent comprises about 100-400 ppm of a UV coloring agent. The applicants allege that the benefits attributable to maintaining the claimed level of UV coloring agent are described throughout the specification, particularly in the Examples provided. The applicants further contend that dependent claims 23 and 30 recite a specific concentration range for the fluorine-based polymer as containing the in the oil repelling agent.

This is not persuasive for the following reasons. The examiner disagrees that the language of the bearing claims is the relevant issue. Because these claims are directed to an article, the relevant issue is the final article and not the process steps or intermediate

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compositions that may be used to form the final article. The limited description of the oil repelling agent recited in the claims does not appear to result in an oil repelling film that is distinct from that of Miura et al., since the composition of the oil repelling film cannot be determined from the oil repelling agent recited in the claim. As outlined above in some detail, the oil repelling agent as claimed can be used to form a myriad of coated bearings. The coating of Miura et al. appears the same as the instant coating since it performs the same oil repelling function and contains a sufficient concentration of UV coloring agent to permit visible inspection. The Examples provided in the specification are insufficient because they are not commensurate in scope with the invention as claimed. The oil repelling agent used in the Examples is made of 3 components, a determinable amount of fluorine-based polymer and UV coloring agent with the remainder being solvent. Therefore, the oil repelling films formed from the agents in the Examples have definitive compositions: a fluorine-based polymer film with a specific amount of UV coloring agent and perhaps some residual solvent. However, the claimed oil repelling agent merely comprises solvent and specific amounts of UV coloring agent and fluorine-based polymer (in dependent claims 23 and 30) but can also contain any number of other components such that the composition of the resulting article is not commensurate in scope with any showing in the specification.

The applicant further argues that the concentration range of the UV coloring agent recited in the claimed composition was not chosen for the purpose of optimizing the visual recognition of the coating but rather to reduce the generation of outgas. Success in the reduction of outgas is alleged to be demonstrated in the Examples presented in the specification. This is contrasted

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with Miura et al. which teach that the coloring agent is added to allow for visual recognition and not the problem of outgas production.

This is not persuasive for the following reasons. Visual inspection is one of the criteria used by the applicants to establish the concentration of UV coloring agent. The applicants point out that the reduction of outgas production is another criteria and argue that the concentration range recited exhibits unexpected results in that it not only allows for visual inspection but also results in less outgassing. A rejection under 35 U.S.C. 103 may be overcome by a showing of unexpected results (see MPEP 716.02). However, the showing presented in the specification is insufficient to overcome the rejection for the following reasons.

First, the showing in the specification is not commensurate in scope with the claims. Claims 1-7, 21, 22, and 37-40 are directed to an oil repelling agent, not a bearing, and the oil repelling agent itself does not exhibit a reduction in outgassing. With respect to claims 23-36 directed to a bearing, three examples are presented in the specification, each one resulting in a coating consisting of a fluorine-based polymer and a determinable amount of UV coloring agent (and possibly some residual solvent). However, the bearing of claims 23-36 is neither required to have a fluorine-based polymer film containing a determinable amount of UV coloring agent (and possibly residual solvent) nor is it required to have a specific degree of outgas production. The oil repelling agent that forms the oil repelling film in claims 23-36 merely comprises a fluorine-based polymer, UV coloring agent, and solvent, leaving the composition open to any amount of other constituents including materials that decompose and/or volatilize under the outgassing test condition of the Examples.

Second, the showing in the specification does not appear to be a comparison of the closest prior art. The composition of the oil repelling agent used as Comparative Example 1 is referred to as merely a conventional oil repelling agent and there is no indication that it is the oil repelling agent of Miura et al. The agent of Comparative Example 2 does not contain a coloring agent and therefore does not appear to be the oil repelling agent of Miura et al.

Finally, it is not clear that the results presented in Table 1 represent unexpected results attributable to the concentration of UV coloring agent in the fluorine-based polymer film. Without knowing the compositions of the comparative examples it cannot be determined whether the reported increase in generated outgas results from the amount of UV colorant used or other factor(s) such as the choice of fluorine-based polymer, solvent, etc.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramsey Zacharia whose telephone number is (571) 272-1518. The examiner can normally be reached on Monday through Friday from 9 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney, can be reached at (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ramsey Zacharia
Primary Examiner
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